# **EXHIBIT 55**

#### UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF CALIFORNIA SAN FRANCISCO DIVISION

Biotechnology Value Fund, L.P.; Biotechnology Value Fund II, L.P.; Investments 10, L.L.C.; BVF Investments, L.L.C.; BVF Inc.; and BVF X, LLC,

Plaintiffs,

V.

Celera Corporation; Credit Suisse Securities (USA) LLC; Kathy Ordoñez; Richard H. Ayers; William G. Green; Peter Barton Hutt; Gail M. Naughton; Wayne I. Roe; and Bennett M. Shapiro,

Defendants

No. CV-13-3248-WHA-DMR

# EXPERT REPORT OF DR. ADAM WERNER OCTOBER 21, 2014\*

<sup>\*</sup>Gnarus Advisors, LLC, San Luis Obispo, CA 93407

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#### I. INTRODUCTION

- 1. I, Dr. Adam Werner, have been retained by Lieff Cabraser Heimann & Bernstein, LLP ("Counsel") on behalf of Biotechnology Value Fund, L.P.; Biotechnology Value Fund II, L.P., Investments 10, L.L.C., BVF Investments, L.L.C., BVF Inc., and BVF X, LLC, (collectively the "Plaintiffs" or "BVF") in a section 14(e) and breach of fiduciary duty case against Celera Corporation ("Celera") Credit Suisse Securities (USA) LLC ("Credit Suisse"), Kathy Ordoñez, Richard H. Ayers, William G. Green, Peter Barton Hutt, Gail M. Naughton, Wayne I. Roe, and Bennett M. Shapiro (collectively the "Defendants"). My opinions address the following matter: The lost profits suffered by BVF as a result of the allegedly faulty valuation of Celera by Credit Suisse prior to Celera's purchase by Quest Diagnostics Inc. ("Quest").
- 2. I understand that as an expert witness in this proceeding my duty in providing my report is to the Court and that this duty overrides any obligation to the parties who have engaged me, from whom I have received instructions or from whom I have been paid. I confirm that I have complied with this duty.

#### II. SUMMARY OF OPINION

A. BVF suffered between \$3.42 million and \$193.54 million of lost profits as of October 21, 2014 as a result of the allegedly faulty valuation of Celera and its drug assets performed by Credit Suisse.<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> Throughout my report, I will differentiate between what I will call the but-for damages which are the damages based on the difference between what the plaintiffs should have received for their Celera shares and what they actually received, and lost profit damages. For my analysis, I take the but-for Celera share prices as given based on the report of Carl Saba submitted October 21, 2014. I have been asked to estimate lost profits in this matter, which is what the plaintiffs could have expected to earn on their but-for damages.

#### III. PROFESSIONAL BACKGROUND AND EXPERIENCE

- 3. I am currently a Director at Gnarus Advisors, LLC ("Gnarus") and a Lecturer in finance and economics at the Orfalea College of Business, Cal Poly San Luis Obispo. Prior to being a director at Gnarus, I was the owner of Berkeley Economic Consulting ("BEC"), which was acquired by Gnarus. I have been affiliated with Gnarus/BEC since 2009 and have spent the last 16 years working for consulting firms including Cornerstone Research, CRA International, and NERA. I have been retained by both plaintiffs and defendants to consult on matters pertaining to damages, mergers and acquisitions, lost profits, market efficiency, materiality and loss causation, investment banking, financial valuation, security issuance, bankruptcy, and option backdating. My opinions have been accepted as evidence in federal, state, and bankruptcy courts within the United States as well as the Superior Court of Justice for Ontario, Canada and the Supreme Court of Victoria at Melbourne, Australia. In addition to my teaching at the Orfalea College of Business, I have lectured frequently to attorneys and insurance executives on the topic of damages estimation and settlements in securities class actions. I have also spoken on the estimation of capital rates in emerging economies at a conference organized by the University of Texas' School of Law.
- 4. I hold a Ph.D. in Finance (1999) from Northwestern University's Kellogg Graduate School of Management. While at Kellogg, I taught M.B.A. classes in both corporate finance, and futures and options. I was also awarded a University Scholarship during my time at Kellogg. Prior to graduate school, I served as a Research Assistant at the Federal Reserve Bank of Cleveland. My full Vitae is attached as Exhibit 1 to this report.
- 5. A list of documents I reviewed in forming my opinions in this matter is set forth in Exhibit 2 to this report.

6. I am currently being compensated at \$500 per hour for my ongoing work on this matter. Additional Gnarus consultants have assisted me with my work at rates ranging from \$200 per hour to \$250 per hour.

#### IV. FACTUAL BACKGROUND

- 7. Celera Corporation is a healthcare business that focuses on the integration of genetic testing into clinical care through a combination of products and services. It has been a subsidiary of Quest since May of 2011.<sup>2</sup> This case arises from alleged misconduct surrounding that merger.
- 8. In February 2011, Quest made an offer to purchase Celera, in its entirety, for \$8 per share. This was down from Quest's earlier offer of \$10.25 per share in June 2010.<sup>3</sup> The acquisition included Celera's--

"Corporate [business], which held intellectual property and royalty rights for drug compounds under development by other companies. Among the latter were Cat-K [developed by Merck and] ...in Phase III trials, and ibrutinib, which was under development by Parmacyclics ["PCYC"], and in Phase II trials for three of five indications when the Merger was consummated."<sup>4</sup>

9. Celera's investment banker, Credit Suisse, significantly under-valued the Company's drug assets for the purposes of the merger by making a series of calculation errors and/or questionable assumptions.<sup>5</sup> For example, they misapplied the statistics of a Tufts medical study that found "that drugs in Phase I of clinical development have a 20% chance of making it to market; drugs in Phase II have a 30% chance; drugs in Phase III have a 67% chance; and

<sup>&</sup>lt;sup>2</sup> Celera website, https://www.celera.com/celera/history, accessed October 13, 2014.

<sup>&</sup>lt;sup>3</sup> See second amended complaint in Biotechnology Value Fund L.P. et al. v. Celera Corporation et al., March 14, 2014, p. 33.

<sup>&</sup>lt;sup>4</sup> See second amended complaint in Biotechnology Value Fund L.P. et al. v. Celera Corporation et al., March 14, 2014, p. 24.

<sup>&</sup>lt;sup>5</sup> Note that this excludes additional errors made by Credit Suisse in it valuation of Celera such as it misidentifying a cancer drug as an anti-coagulant. See second amended complaint in Biotechnology Value Fund L.P. et al. v Celera Corporation et al., March 14, 2014, pp. 50-51.

drugs that have been approved by the FDA have an 80% chance." Rather than take these numbers at face value, Credit Suisse chose to use cumulative probabilities ("the Tuft Errors"). As a result, "for the PCYC drugs in Phase I such as HDAC and Btk inhibitor / ibrutinib, it applied a compound percentage of 20% X 30% X 67% X 80% = 3%, rather than 20%." Credit Suisse made a similar error in evaluating Cat-K that resulted in a valuation of Cat-K of \$56 million instead of \$73 million.8

- 10. Credit Suisse's second series of errors arose from them misidentifying the stages that the drugs in question had already reached in clinical trials ("the Clinical Phase Errors"). "Two of the PCYC drugs, ibrutinib and HDAC, had already moved to phase II (for three out of five applications for ibrutinib) by late December 2010. According to the Tufts 2002 Study, this increased the odds of these drugs making it to market from 20% to 30%." Thus, while Credit Suisse should have been using a 30% rate of success for some indications of the PCYC drugs, they instead used a rate of 16%.
- 11. The third "mistake" by Credit Suisse was their decision to use a low peak sales estimate for Cat-K in their valuation model. As late as March 2011, Quest was shown sales estimates for Cat-K of \$3 billion instead of the \$1 billion peak sales number that Credit Suisse used in its final valuation. 10

<sup>&</sup>lt;sup>6</sup> See second amended complaint in Biotechnology Value Fund L.P. et al. v. Celera Corporation et al., March 14, 2014, p. 51.

<sup>&</sup>lt;sup>7</sup> See second amended complaint in Biotechnology Value Fund L.P. et al. v. Celera Corporation et al., March 14, 2014, p. 51.

<sup>&</sup>lt;sup>8</sup> See second amended complaint in Biotechnology Value Fund L.P. et al. v. Celera Corporation et al., March 14,

<sup>&</sup>lt;sup>9</sup> See second amended complaint in Biotechnology Value Fund L.P. et al. v. Celera Corporation et al., March 14, 2014, p. 57. Also see, Jeffrey J. Stewart, Biotechnology Valuation for the 21st Century, Milken Institute, (April 2002).

<sup>&</sup>lt;sup>10</sup> See second amended complaint in Biotechnology Value Fund L.P. et al. v. Celera Corporation et al., March 14, 2014, p. 62.

12. Finally, Credit Suisse appears to have chosen depressed multiples when valuing other segments of Celera's business. While I have not performed an independent study analyzing what the appropriate multiples Credit Suisse should have used when valuing Celera's Labs, Products & Services lines of business, Carl S. Saba, the plaintiffs' valuations expert has performed such an analysis. Based on his analysis, I will estimate the plaintiffs' lost profits as a result of using these depressed multiples and the aforementioned errors in valuing the drug assets.

#### V. BASIS FOR OPINION

A. As a result of correcting for the errors and/or omissions in Credit Suisse's valuation of Celera, BVF's damages are between \$3.42 million and \$193.54 million as of October 21, 2014.

#### 1) Theory

13. The plaintiffs in this matter "are affiliated entities engaged in the business of investing in biotechnology." <sup>12</sup> In other words, the plaintiffs are a group of investment funds and the managers of those funds. The investment funds earn profitability through appreciation in the value of said funds. To the extent that the fund managers are not invested in the aforementioned funds, they are solely compensated through fees charged to the funds' investors. These fees are often heavily dependent upon the performance of the underlying funds as well as the size of the funds. Assuming the allegations asserted by plaintiffs in this case are true, the plaintiffs are harmed in two distinct ways. The first set of damages is based on the theory that plaintiffs should have received a value for their Celera shares in excess of the \$8.00 per share they ultimately received ("but-for damages"). The second set of damages arises from the fact that the

<sup>&</sup>lt;sup>11</sup> See Expert Report of Carl S. Saba, October 21, 2014.

<sup>&</sup>lt;sup>12</sup> See second amended complaint in *Biotechnology Value Fund L.P. et al. v. Celera Corporation et al.*, March 14, 2014, p. 62.

defendants could have earned profits (losses) on the difference between what they should have received and what they did receive for their Celera shares from the point in time that they sold those shares through today. 13 This second set of damages is commonly referred to as the plaintiffs' lost profits. It is these set of damages I have been asked to estimate.

14. To the extent that there were any damages associated with the difference between the \$8 per share the plaintiffs received upon selling their shares and the amount they should have received for those shares, I rely upon the plaintiffs' valuation expert, Carl Saba, to estimate what those but-for values should have been.

#### 2) Estimation of Damages

15. In order to calculate the plaintiffs' lost profits, I first had to determine the rate of return the plaintiffs would have earned on their but-for damages from the time they sold their shares in Celera until today. 14 I did this by taking the monthly returns on the BVF funds from January 1994 through April 2011 and removing the impact of Celera on these returns. <sup>15</sup> In other words, I used the rate of return that the plaintiffs could have expected to earn as of May 2011 based on their past returns on investments. 16 I then used these returns as an estimate of what the plaintiffs would have earned on their but-for damages when they sold their holdings in May These returns were calculated based on the plaintiffs' net and gross returns. 17 2011. Respectively, those annually compounded returns were 14.85% and 20.22%% (see Exhibit 3).

<sup>&</sup>lt;sup>13</sup> For the purposes of my analysis, today is defined as October 21, 2014. My damages estimate will need to be updated based upon when, and/or if, this case reaches a settlement/verdict at some future date.

<sup>&</sup>lt;sup>14</sup> To the extent that the Court may find that the plaintiffs had a duty to mitigate their damages by stopping purchasing shares of Celera after some point in time, this mitigation is not reflected in my damage calculations.

<sup>&</sup>lt;sup>15</sup> Note that BVF was founded in 1993.

<sup>&</sup>lt;sup>16</sup> This is often referred to as an *ex ante* analysis.

<sup>&</sup>lt;sup>17</sup> The net returns only include the returns on the underlying portfolios and exclude the fees earned by the portfolio managers. The gross returns are the returns earned by the funds as well as the fees earned by the portfolio managers.

- 16. The other two components in our damages calculation are the number of damaged shares and the price the plaintiffs should have received but-for the allegedly wrongful acts undertaken by the defendants. Ignoring the last component for the time being, at the time of the merger (May 17, 2011) the plaintiffs owned 19,352,042 shares of Celera. If we multiply the total number of shares by the difference between what the plaintiffs should have received but-for the alleged wrongful acts and what they actually received for their Celera shares, we have an estimate of the damages to the plaintiffs as of May 17, 2011. The but-for damages per share are calculated and explained in Carl S. Saba's report dated October 21, 2014. If we then bring the total but-for damages forward to today based on the plaintiffs' historical financial returns we calculated, we will get an estimate of the plaintiffs' lost profits.
- I have been asked to estimate damages under 4 different scenarios. In the first scenario, I was asked to simply adjust for the errors in the valuation of Celera that were attributed to the Tufts Errors. In this scenario, the but-for prices should have been between \$8.11 per share and \$10.02 per share. <sup>19</sup> At these prices, the but-for damages would have been between \$.11 (\$8.11 \$8.00) per share and \$2.02 (\$10.02 \$8.00) per share. This results in damages between \$2.13 million and \$39.09 million as of May 17, 2011. At these levels of but-for damages, damages to the plaintiffs as of October 21, 2014 based on net historical returns would be between \$3.42 million and \$62.84 million (see Exhibit 4). The corresponding lost profits owed to plaintiffs if I used gross returns to estimate lost profits would be between \$4.00 million and \$73.49 million (see Exhibit 5).

As the gross returns are currently estimates by the plaintiffs of their actual gross returns over that period, they should serve, as a placeholder until a more exact estimate of what those return are is available.

<sup>&</sup>lt;sup>18</sup> Per information provided by Spike Loy, employee of BVF, which we verified by reviewing all trades of Celera by BVF.

<sup>&</sup>lt;sup>19</sup> See the expert report of Carl S. Saba, October 21, 2014 paragraph 42.

In the second scenario, I was asked to estimate damages in a but-for world where the but-for price received by the plaintiffs would adjust for both the Tufts Errors and the Clinical Phase Errors. Under this scenario, the but-for price received by the plaintiffs should have been between \$8.20 per share and \$10.12 per share. Under this scenario, the but-for damages would have been between \$.20 (\$8.20 - \$8.00) per share and \$2.12 (\$10.12 - \$8.00) per share. Damages as of May 17, 2011 would be between \$3.87 million and \$41.03 million. Using net returns to estimate damages, lost profits as of today would be between \$6.22 million and \$65.95 million (see Exhibit 4). Using gross returns, lost profits would be between \$7.28 million and \$77.12 million (see Exhibit 5).

19. In the third scenario, I was asked to estimate damages making corrections for the errors related to the Tufts Study, the Clinical Phase Errors, and the depressed peak Cat-K sales figure. In this third scenario, the but-for price the plaintiffs should have received for their holdings in Celera ranged from \$10.01 per share and \$12.24 per share.<sup>21</sup> Under this scenario, the but-for damages would have been between \$2.01 (\$10.01 - \$8.00) per share and \$4.24 (\$12.24 - \$8.00) per share while total damages would have been between \$38.90 million and \$82.05 million. If I then estimate damages using the plaintiffs' historical net returns, lost profits range from \$62.53 million to \$131.91 million as of October 21, 2014. If I use gross returns, lost profits range from \$73.12 million and \$154.25 million.

20. Finally, under the fourth damages scenario, I was asked to calculate damages under scenario 3 but to use Mr. Saba's multiples estimates rather than those used by Credit Suisse in its valuation. In this scenario, the but-for price was between \$10.69 per share and

<sup>&</sup>lt;sup>20</sup> See the expert report of Carl S. Saba, October 21, 2014 paragraph 42.

<sup>&</sup>lt;sup>21</sup> See the expert report of Carl S. Saba, October 21, 2014 paragraph 42.

\$13.32 per share. The associated but-for damages associated with these valuations would be

between \$2.69 (\$10.69 - \$8.00) per share and \$5.32 (\$13.32 - \$8.00) per share. Total damages as

of May 17, 2011 would have been between \$52.06 million and \$102.95 million. Under this

fourth scenario, damages based on the plaintiff's net historical returns would be between \$83.69

million and \$165.51 million. Were I to use the plaintiffs' historical gross returns to estimate lost

profits, damages would be between \$97.86 million and \$193.54 million.

VI. POTENTIAL ADDITIONAL ANALYSES TO BE PERFORMED

21. My opinions are based on the information received as of the date of this report.

Should additional data become available subsequent to the submission of this report, I reserve

the right to make changes to this report based on this new data.

Dated: October 21, 2014

/s/ Adam Werner

Adam Werner, Ph.D.

Director, Gnarus Advisors, LLC



## Adam Werner, Ph.D.

**Director** 

#### Overview

Dr. Adam Werner is an expert witness and has more than sixteen years' experience working extensively in litigation consulting, concentrating primarily on security class actions, mergers and acquisitions, investment banking, shareholder derivative cases, and valuation cases. He has been retained to provide expert opinions and testify in federal, state and bankruptcy courts within the U.S. He has also provided testimony in Australian and Canadian court cases, as well as domestic and international arbitrations. Many of these opinions have focused on materiality and the estimation of damages in security class actions.

In addition to being a Director at Gnarus, Dr. Werner is currently a lecturer in economics and finance at the Orfalea College of Business at Cal Poly San Luis Obispo. He lectures frequently on the topics of securities litigation and capital cost estimation. Prior to joining Gnarus, Dr. Werner was a Principal at Berkeley Economic Consulting and worked within the securities practice of a number of the largest litigation consulting firms in the United States, as well as the Federal Reserve Bank.

## **Expert Reports** and Testimony

In re: Hi-Crush Partners Partners L.P. Securities Litigation. Issued a declaration (2014), a supplemental declaration (2014), and provided deposition testimony (2014) regarding market efficiency in a securities class action (U.S.D.C. Southern District of New York).

lan Mausner v. MarketByte LLC, et al. Issued a declaration about investment advisor incentives and liquidity needs in a securities class action (U.S.D.C. Southern District of California, 2014).

Artes Medical, Inc. v. Lemperle et al. Provided deposition testimony on behalf of defendants about alleged damages caused by a proxy contest (Superior Court of the State of California, County of San Diego, Central District, 2013).

*In re: Ebix Inc. Securities Litigation.* Issued a declaration (2012) and provided deposition testimony (2013) regarding market efficiency in a securities class action (U.S.D.C. Northern District of Georgia, Atlanta Division).

Erik Poole and William Rhody v. Alange Energy Corp., et al. Issued a report (2012) and a reply report (2013) on market efficiency and damages in a securities class action (Superior Court of Justice Ontario, Canada).

*In re: Hecla Mining Securities Litigation.* Issued a declaration on investor losses in a securities class action (U.S.D.C. District of Idaho, 2012).



# Adam Werner, Ph.D.

**Director** 

Mark Henning, Roman Zaretski and Chrisitan Stillmark v. Orient Paper, Inc. et al. Issued a declaration (2011), a supplemental declaration (2012) and provided deposition testimony (2012) regarding market efficiency in a securities class action (U.S.D.C. Central District of California).

Carlos Munoz et al. v. China Expert Technology, Inc., et al. Issued a declaration (2012), a supplemental declaration (2012) and provided deposition testimony (2012) in a securities class action regarding market efficiency (U.S.D.C. Southern District of New York).

Theodore Dean, et al. v. China Agritech, Inc., et al. Issued a declaration (2012), a supplemental declaration (2012) and provided deposition testimony (2012) in a case regarding market efficiency in a securities class action (U.S.D.C. Central District of California).

Robert Michael Shenk, Derivatively on Behalf of Sirius XM Radio Inc. v. Melvin Alan Karmazin, et al. Issued an expert report (2011), a supplemental expert report (2012) and provided deposition testimony (2012) in a case involving damages in a shareholder derivative matter (U.S.D.C. Southern District of New York).

Pathway Investments Pty Ltd and Doystoy Pty Ltd v. National Australia Bank Ltd. Submitted a report on survey techniques, the efficient market hypothesis and liquidity in a securities class action (Supreme Court of Victoria at Melbourne, Australia, Commercial and Equity Division, Commercial Court, 2012).

Bruce Simmonds, Robert Grant and Gordon Moore v. Armtec Infrastructure Inc. et al. Issued a report on market efficiency and damages in a securities class action (Superior Court of Justice Ontario, Canada, 2011).

In re: BP plc. Securities Litigation. Issued a declaration regarding damages and materiality in a securities class action (U.S.D.C. Southern District of Texas, Houston Division, 2010).

In re: Tripath Technology Inc., Debtor. Issued a report (2009) and provided deposition testimony (2010) regarding damages arising from Directors and Officers' breach of fiduciary duty in bankruptcy court (U.S.B.C. Northern District of California, San Jose Division).

David Ainslie and Muriel Marentette v. CV Technologies et al. Issued a report estimating damages in a securities class action (Superior Court of Justice, Ontario, Canada, 2010).

Harry Stackhouse, on Behalf of Himself and All Others Similarly Situated v. Toyota Motor Corporation, et al. Issued a declaration regarding the relationship between Toyota's U.S. stock price and Japanese stock price in a securities class action (U.S.D.C. Central District of California, 2010).

Phillip Elliot and William Kormos v. NovaGold Resources Inc., et al. Issued a declaration in a securities class action regarding trading volume in the U.S. versus Canada. (Superior Court of Justice, Ontario, Canada, 2010).

International Arbitration between a private equity firm and Chinese biotech company. Issued a report (2008) and testified (2009) before an International Arbitration Committee regarding the value of a private equity investment.

Arbitration between Albert Richards and Old Republic Title Insurance. Deposed regarding estimated damages incurred by plaintiff as a result of a forced sale of Russian securities due to Old Republic's breach of contract (2008).

Californians United for a Responsible Budget, et al., v. California State Public Works Board, et al. Issued a report on the cost of issuing revenue bonds to fund California prison expansion (The Superior Court for the State of California, County of Sacramento, 2008).

Arbitration between Daniel Lyons and Morgan Lyons, and Chinese Hospital Association and Sam English. Deposed regarding plaintiffs' calculated damages arising from asbestos exposure for plaintiff (2003).

#### **Experience** Securities and Finance

- In re: China Medicine Corporation Securities Litigation. Retained by class counsel to estimate damages and determine market efficiency in a securities class action.
- In re: Citigroup Inc. Securities Litigation. Testified as to damages and inflation in a securities class action.
- In re: Bank of America Corp. Securities, Derivative, and Employee Retirement Income Security Act (ERISA) Litigation. Retained by class counsel as damages expert in a derivative securities class action.
- Government of Guam Retirement Fund et al. v Countrywide Financial Corp, et al. Retained by class counsel to estimate damages in a securities class action.
- Keith Cohn v. Sanford C. Bernstein & Co., LLC and AllianceBernstein LP. Retained by client to testify on portfolio risk in a FINRA arbitration.
- In re: Semgroup Energy Partners, L.P., Securities Litigation. Retained by Plaintiffs to estimate damages in a securities class action.
- Asbestos Workers Philadelphia Pension Fund v. Merix Corporation, et al. Retained by Plaintiffs to evaluate fairness of merger between Merix and Viasystems.

- IPO Securities Litigation. Retained by Goldman Sachs to provide consulting on the IPO process, the valuation of securities at IPO and the possible impact of "tie-in" agreements on the pricing of IPOs for the purpose of analyzing class certification and damages.
- Joseph Phelps Vineyards, Inc., et al., v Craig Williams, et al. Retained by Joseph Phelps Vineyards to estimate the value of the winery as part of arbitration.
- UnitedHealth Group Option Backdating Investigation. Retained by a Special Litigation Committee formed by UnitedHealth Group's board of directors to estimate harm caused by company's decision to backdate options.
- SEC v. Henry Nicholas, et al. Retained by founder of Broadcom to estimated harm caused by company's decision to backdate options.
- Enrico Bondi on behalf of Parmalat S.p.A. v. Bank of America et al. Hired by Bank of America to rebut damage arguments regarding Bank of America's role in Parmalat's eventual bankruptcy.
- Capital Trading Co. v. Conor Medsystems. Retained to analyze a fairness opinion issued by Citigroup regarding the price offered by Johnson & Johnson to acquire Conor.
- Enron Solvency. Retained by the surviving Enron Corporation to estimate the value of its assets for litigation purposes.
- SEC v. Spear Leeds Kellogg (Goldman Sachs.) et al. Estimated damages associated with trading ahead allegations made by the SEC on behalf of Goldman market makers on the New York Stock Exchange, American Stock Exchange, Philadelphia Stock Exchange and the Chicago Board of Options Exchange.
- General Fire and Casualty co..et al. v. Guy Carpenter and Co., Inc. Hired by defendant to rebut allegations that it had given incorrect advice to the plaintiff regarding reinsurance contracts.
- R.D. Hubbard v. Pinnacle Entertainment, Inc. Analyzed the value of options granted and later rescinded on behalf of our client, the defendant.
- Thomas Slemmer, et al. v. Cucamonga Valley Water District, et al. Estimated the value of restricted stock in a mutual water company.
- Department of Labor v. Genuity (investigation). Assisted Genuity in an investigation by the Department of Labor as to whether or not Genuity stock was a safe investment for Genuity's pension fund. Investigation was dismissed.

- Jason Stanley, et al. v. Safeskin Corporation, et al. Estimated damages and consulted on materiality for defendant in a securities class action.
- Nanogen, Inc. v. Donald D. Montgomery and CombiMatrix Corporation. Estimated damages for defendant in cross complaint over a failed IPO resulting from plaintiff's claims of patent infringement in genomic industry.
- Conseco, Inc. Securities Litigation. Retained by defendants to calculate damages in a securities class action matter.
- Madison/OHI Liquidity Investors, LLC v. Omega Healthcare Investors. Estimated damages to Madison's investment funds as a result of the early termination of a debt facility.
- Barbara Rosen, et al. v. Macromedia, Inc., et al. Prepared rebuttal analyses in securities class action suit on behalf of Macromedia.
- Karen Yarborough v. PeopleSoft, Inc. and Does 1-20. Calculated value of stock option package in wrongful termination suit on behalf of PeopleSoft.
- *Michael Carabetta v. Novadigm, Inc., et al.* Did analysis of damages to a former company insider on behalf of Novadigm. Estimated value of lost options and salary.
- Allen T. Gilliland Trust, et al. v. H&F MobileMedia Partners, LLC, et al. Engaged by auditors to analyze plaintiffs' decision to affirm a prior transaction.
- California Federal Bank v. United States. Estimated damages caused by government in breach of contract case on behalf of Cal Fed.
- LaSalle Talman v. United States. Estimated damages caused by government in breach of contract case on behalf of LaSalle Talman.

#### **Intellectual Property**

- Transocean v. Maersk. Retained by Maersk to defend claims of patent infringement in case involving oil drilling technology.
- Abbott Laboratories, et al. v. Sandoz, Inc. Retained on behalf of Abbott to estimate
  patent infringement damages as a result of Sandoz's decision to introduce a generic drug
  prior to the expiration of a patent.
- LG Phillips LCD Co., LTD v. Tatung, Chunghwa Picture Tubes, et al. Provided rebuttal analysis for defendants in a patent infringement case dealing with LCD technology.

- PostX Corporation v. Secure Data in Motion, Inc. d/b/a/ Sigaba Corporation. Calculated damages arising from tortuous interference and patent infringement in the secure document delivery market. Client was victorious on both complaint and cross-complaint.
- Larkspur Data Resources, Inc. v. Trust Administrators, et al. Assisted plaintiff in calculating damages in trademark and copyright infringement case involving proprietary databases.
- Dioptics Medical Products, Inc., v. The Cooper Companies, Inc.; CooperVision, Inc.; A. Thomas Bender; and Does 1-15. Retained by plaintiff to calculate damages in a copyright infringement case over naming of eyewear.
- Intel Corporation v. Broadcom Corporation. Retained by Broadcom to estimate damages alleged by Intel based on charges of patent infringement.
- Australia Vision Services Pty. Ltd. v. Dioptics Medical Products, Inc., Henry Lane, and individual, and Does 1-10. Estimated profits lost by Dioptics as a result of a competitor's allegations of patent infringement.
- American Booksellers Association, Inc. v. Barnes & Noble, et al. Worked on analysis of publisher discounts and analysis of openings and closings of bookstores on behalf of Borders.

#### **Education** Northwestern University, Kellogg Graduate School of Management

Ph.D., Finance Oberlin College

B.A. with Honors, Economics

## **Employment** LitiNomics

**Previous** Berkeley Economic Consulting

CRA International

National Economic Research Associates, Inc.

Cornerstone Research

Kellogg Graduate School of Management, Northwestern University

Federal Reserve Bank

#### Publications and **Manuscripts**

#### **Manuscripts**

"The Impact of Underwriter Reputation on Equity Offering: An Empirical Study." Thesis, 1999.

"The Long-Run Performance of Underwriters and its Impact on Seasoned Equity Offerings." 1999.

"Dynamic Measures of Underwriter Reputation: A Study of IPO's." 1999.

"CAFE Economics: A Note on the Limits and Effectiveness of Fuel Economy Regulation." With Stephen Sheppard, 1992.

#### **Publications**

"More 'Dark Pools" Deepen Litigation Issues." Law360, 2013.

"Recent Trends in Securities Class Action Litigation: Will Enron and Sarbanes-Oxley Change the Tides." With Elaine Buckberg, Todd Foster and Ronald Miller, 2003.

"The Effects of the PSLRA and Subsequent Events on Securities Litigation." With Fred Dunbar and Todd Foster, prepared for the New York City Bar Association, 2003.

"The Energy Tax: Who Pays?" joint with Mark Schweitzer, in Federal Reserve Bank of Cleveland's Economic Commentary, 1993.

Presentations "Cause or Effect: Are Settlement Statistics Driving Down Settlements?" Presentation to Robbins Geller Rudman & Dowd, LLP in San Diego, CA on October 10, 2013, Wolf Popper, LLP in New York, NY on September 18, 2013, Abraham, Fruchter & Twersky, LLP in New York, NY on September 17, 2013, Robbins Geller Rudman & Dowd, LLP in Melville, NY on September 11, 2013, Entwistle & Cappucci, LLP in New York, NY on September 10, 2013, and Faruqi & Faruqi, LLP in New York, NY on September 10, 2013.

> "The Economics of Securities Litigation." Sidley & Austin in Los Angeles, CA on March 14, 2007.

"The Global Cost of Capital." Panel discussion on valuing assets in foreign countries at the University of Texas School of Law VALCON conference in Las Vegas on February 8, 2007.

"Economic Damages in Securities Fraud Matters." NERA Luncheon Seminars with Adam Werner given at the Fifth Avenue Suites Hotel in Portland, OR on November 19, 2002 and at the W Hotel in Seattle, WA on November 20, 2002.

"Shareholder Class Actions: Calculation of Damages." Presentation to Skadden, Arps, Slate,

Meagher & Flom, LLP in San Francisco, CA on October 30, 2002, Marsh FINPRO in San Francisco, CA on September 18, 2002, Marsh Risk & Insurance Services in San Diego, CA on September 17, 2002 and Marsh FINPRO in Los Angeles, CA on September 13, 2002.

"Capital Formation: Class Action Litigation and Prevention." Speech and panel discussion focusing on securities class action litigation, which sometimes arises from initial public offerings and/or market volatility in the aftermarket. Presented at the 2002 CALBIO Summit in San Diego, CA on April 23, 2002.

"Shareholder Class Actions after the NASDAQ Bubble." Speech given to the Securities Litigation Sub-Committee of the Colorado Bar Association at Holland & Hart, LLP in Denver, CO on April 17, 2002.

"Trends in Litigation: How Claims and Losses Are Valued." Speech at the American Bankers Association Insurance Risk Management Annual Conference in San Diego, CA on February 4, 2002.

"Recent Trends in Securities Litigation." "Basic Economic Analysis in Securities Class Action" and "Challenging the Efficient Market Assumption in Securities Class Action Matters." presented to Cooley Godward in San Diego, CA on November 28, 2001.

"Recent Trends in Securities Litigation." presentation with Marcia Mayer given at Howard, Rice, Nemerovski, Canady, Falk & Rabkin in San Francisco, CA on November 27, 2001.

"Recent Trends in Securities Litigation." presentation given to Marsh USA in Denver, CO on November 8, 2001, and Thelen, Reid & Priest in Los Angeles, CA on November 6, 2001.

"Financial Economics in Litigation." speech presented to Simpson, Thacher & Bartlett in Palo Alto, CA on July 31, 2001, Baker & McKenzie in San Diego, CA on July 18, 2001, Brobeck, Phleger & Harrison in San Francisco, CA on June 25, 2001 and to Latham & Watkins in San Francisco, CA on June 26, 2001.

"Economic Analysis in Securities Fraud Cases." Speech with Alan Cox delivered to Morrison & Forester, San Francisco, CA on July 25, 2001.

"Recent Trends: Shareholder Class Actions Five Years After the PSLRA." speech presented to Shearman & Sterling in San Francisco, CA on May 23, 2001, O'Melveny & Myers in Los Angeles, CA on May 30, 2001 and Gray, Cary, Ware & Freidenrich in San Diego, CA on June 6, 2001.

#### Exhibit 2 Documents Reviewed

Expert Report of Carl Saba, October 21, 2014

Second amended complaint in Biotechnology Value Fund L.P. et al. v. Celera Corporation et al., March 14, 2014 Jeffrey J. Stewart, Biotechnology Valuations for the 21st Century, April 2002.

"CRA - market data - 1999 thru 2011.xlsx" received July 21, 2014

Amended and Restated Limited Liability Company Operating Agreement of BVF X LLC, July 2011

BVF Investments Operating Agreement Key Points, September 5, 2014

"BVF & Alpha.pdf" received October 2, 2014

"BVF Returns 2006-2010.pdf" received October 16, 2014

"BVF Net Returns.xls" received October 20, 2014

"BVF Historical Net Returns.pdf" received October 20, 2014

"BVF Gross Return 2006-2013.xlsx" received October 17, 2014

"CRA CTR.xlsx" received October 2, 2014

"Quarterly Exposure Summary\_3.31.14.xlsx" received October 2, 2014

BVF Security Valuation Policy as of September 2013

"Celera Valuation Cath-K March 2010 CLR\_BVF\_000113583.xls" received September 5, 2014

"LEK valuation of Cath-K March 2010 (CLR\_BVF\_000114029).xls" received September 5, 2014

"BVF - Celera Purchase & Sale History.xls" received August 27, 2014

Investment 10 L.L.C. (An Illinois Limited Liability Company) Financial Statements December 31, 2012

Investment 10 L.L.C. (An Illinois Limited Liability Company) Financial Statements December 31, 2013

Biotechnology Value Fund II, L.P. (A Delaware Limited Partnership) Financial Statements December 31, 2012

Biotechnology Value Fund II, L.P. (A Delaware Limited Partnership) Financial Statements December 31, 2013

BVF Investments, L.L.C. (A Delaware Limited Liability Company) Financial Statements December 31, 2012

BVF Investments, L.L.C. (A Delaware Limited Liability Company) Financial Statements December 31, 2013

Biotechnology Value Fund, L.P. (A Delaware Limited Partnership) Financial Statements December 31, 2012

Biotechnology Value Fund, L.P. (A Delaware Limited Partnership) Financial Statements December 31, 2013

## Exhibit 3 Annualized Rates of Return

Annualized Net Rate of Return for BVF	14.85%
Annualized Gross Rate of Return for BVF	20.22%

#### Notes and Sources:

- (1) The annualized rate of return was attained by first calculating the monthly compounded interest on the Biotechnology Value Fund, LP (BVF) from January 1994 through April 2011. To do that, I used historical monthly BVF returns and removed the impact of Celera on those returns. Then, I raised the final monthly compounded interest in April 2011 to the power of 17.33 (the number of years between January 1994 and April 2011) and subtracted 1.
- (2) Net returns only include the returns on the underlying portfolios and exclude the fees earned by the portfolio managers. Gross returns are the returns earned by all sets of plaintiffs.
- (3) Historical BVF returns provided in "BVF Historical Net Returns.pdf" on October 20, 2014 and "BVF Estimated Gross Returns Since Inception.xlsx" on October 21, 2014.
- (4) Historical monthly BVF returns from Celera provided in "CRA CTR.xlsx" on October 2, 2014.

# **Estimated Losses using Net Returns** Exhibit 4

	Tollaro Tollaro						
Damages Low	Damages High	# Shares Sold	Sell Date	Damages on 5/17/2011 Low	Damages on 5/17/2011 High	Damages Low	Damages High
Scenario 1: Adjust Celera valuation for erroneous use of Tufts Study \$0.11 \$2.02 19,352,042 5/17/11	t Celera valı \$2.02	era valuation for errone \$2.02	roneous use o <sub>5</sub>	f Tufts Study \$2,128,725	\$39,091,125	\$3,422,189	\$62,843,836
Scenario 2: Adjus \$0.20	t Celera valı \$2.12	era valuation for errone \$2.12 19,352,042 5.	roneous use oj 5/17/11	Scenario 2: Adjust Celera valuation for erroneous use of Tufts Study and Clinical Phase Errors \$0.20 \$2.12 19,352,042 \$717/11 \$3,870,408	Phase Errors \$41,026,329	\$6,222,162	\$65,954,917
Scenario 3: Adjus \$2.01	t Celera valı \$4.24	era valuation for Tufts 5 \$4.24 19,352,042 5	fts Study, Clir. 5/17/11	Scenario 3: Adjust Celera valuation for Tufts Study, Clinical Phase Errors, and low Cat-K Peak Sales \$2.01 \$4.24 19,352,042 5/17/11 \$38,897,604 \$82,0	v Cat-K Peak Sales \$82,052,658	\$62,532,728	\$62,532,728 \$131,909,834
Scenario 4: Adjus: \$2.69	t Celera valı \$5.32	elera valuation for Tufts S \$5.32 19,352,042 5	fts Study, Clir 5/17/11	nical Phase Errors, low Cat \$52,056,993	t-K Peak Sa	les, and Saba's Multiples \$102,952,863 \$83,688,079 \$165,509,509	\$165,509,509

# Sources:

- (1) Per share damages were obtained from the expert report of Mr. Carl Saba, October 21, 2014, paragraph 42.
- (2) Historical BVF returns provided in "BVF Historical Net Returns.pdf" on October 20, 2014. (3) Historical monthly BVF returns from Celera provided in "CRA CTR.xlsx" on October 2, 2014.
- (4) Historical purchases and sales of Celera shares by BVF were provided in "BVF Celera Purchase & Sale History.xls" on August 27, 2014.

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# **Estimated Losses using Gross Returns** Exhibit 5

	_		_	**
Damages High	\$4,001,684 \$73,485,472	\$7,275,789 \$77,123,367	\$154,246,734	\$193,535,996
Damages Low	\$4,001,684	\$7,275,789	Sales \$82,052,658 \$73,121,683 \$154,246,734	Multiples \$97,859,366
Damages on 5/17/2011	\$39,091,125	hase Errors	Cat-K Peak Sales	Scenario 4: Adjust Celera valuation for Tufts Study, Clinical Phase Errors, low Cat-K Peak Sales, and Saba's Multiples
High		\$41,026,329	\$82,052,658	\$2.69
Damages on 5/17/2011	f Tufts Study	Scenario 2: Adjust Celera valuation for erroneous use of Tufts Study and Clinical Phase Errors	Scenario 3: Adjust Celera valuation for Tufts Study, Clinical Phase Errors, and low Cat-K Peak Sales	nical Phase Errors, low Cat
Low	\$2,128,725	\$0.20 \$2.12 19,352,042 5/17/11 \$3,870,408	\$2.01 \$4.24 19,352,042 5/17/11 \$38,897,604	\$52,056,993
Sell Date	roneous use o	roneous use o	yfts Study, Clir	ıfts Study, Clir
	5/17/11	5/17/11	5/17/11	5/17/11
# Shares	era valuation for err	lera valuation for err	era valuation for Tu <sub>3</sub>	era valuation for Tu,
Sold	\$2.02 19,352,042	\$2.12 19,352,042	\$4.24 19,352,042	\$5.32 19,352,042
Per-share Per-share Damages Damages Low High	sst Celera val	sst Celera val	sst Celera val	sst Celera val
	\$2.02	\$2.12	\$4.24	\$5.32
Per-share Damages Low	Scenario 1: Adjust Celera valuation for erroneous use of Tufts Study \$0.11 \$2.02 19,352,042 5/17/11	Scenario 2: Adjust \$0.20	Scenario 3: Adjus:	Scenario 4: Adjus:

# Sources:

- (1) Per share damages were obtained from the expert report of Mr. Carl Saba, October 21, 2014, paragraph 42.
- (2) Historical BVF returns provided in "BVF Estimated Gross Returns Since Inception.xlsx" on October 21, 2014. (3) Historical monthly BVF returns from Celera provided in "CRA CTR.xlsx" on October 2, 2014.
- (4) Historical purchases and sales of Celera shares by BVF were provided in "BVF Celera Purchase & Sale History.xls" on August 27, 2014.

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